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ZOÖLOGY.

THE DISTRIBUTION OF M. MARGARITIFERA.—Professor Call published a note in the last number of the NATURALIST which seems to demand notice from me, inasmuch as the note appears where readers may see it who have *not seen* my articles. There are two of these, published in the Journal of the Cincinnati Society of Nat. History, and subsequently, a synopsis of the first, and the whole of the second, in the *Am. Jour. Sci. and Arts*, March, 1882. My first article appeared in the Cincinnati Journal, January, 1881. My second in July, 1881. In reference to the distribution of the species under consideration, I said, in the first article, pp. 2 and 3. "but among these shells occurs one remarkable anomaly of distribution in the presence of the *Margaritana margaritifera* Lam., an European species which occurs in the New England States, and, though wanting across the whole interior of the continent, reappears in the drainage of the Pacific slope." Having thus put upon record the general fact of the great severance of these two areas of occupancy, I used the language quoted by Professor Call, in the *generalizations* of my *second paper*.

I may say that I have specimens of this species in my collection, from several streams in the different "New England States," and from various points in the "drainage of the Pacific slope," and that, having given evidence of the possession of the necessary knowledge on this head in my first article, I may have been rather careless about the use of language in my second, thinking that I had made my *thesis* sufficiently plain.

I simply wish to put upon record the fact, that my ignorance of the distribution of this curious species is not so great as Professor Call's note would seem to suggest.

As this matter is open for further remarks, I wish to call the attention of the students of this subject to the distribution of the *Margaritana monodonta* Say, originally described by him as a Unio, but which belongs to the present genus without a doubt. Mr. Lea early mentioned the similarity of this species to the *M. margaritifera*, Obs. vol. VII, p. 43, and vol. X, p. 58. In the first of these articles he says (after having described the soft parts of the *M. margaritifera*): "The *Unio monodontus* Say properly belongs to this genus. The soft parts have the same character, and the hard enveloping parts are very closely allied." In the second of these references he says (following a discussion of the soft parts of Monodontus): "The form of the outer hard parts, as well as the soft parts, is so different from other Unionidæ, except *Margaritana margaritifera* that we might expect to find a strong variation in the important part of the embryonic shell, but, unfortunately, we have not yet seen the embryonic shell of either of them," etc. Now while there are differences in these two mollusks, sufficiently emphasized to separate them as species, there are numerous characters pointing to their close alliance, and as I have seen no record of the occurrence of the Monodontus in localities inhabited by the Margaritifera, it may fairly be said to be its representative over the region, or a large part of it, where the latter is wanting. In fact, the suggestion of close relationship, and differences due to undetermined causes, make a thorough study of these two species, by competent histologists, a matter of very great interest. This is only one, and that not a specially emphatic case of equivalents, some of which I hope to cite in part III of this discussion, and every phase of it seems to me to look in the direction pointed out in part II. It remains to say that this shell has a close analogue, and a southern one at that, in Europe, this being the *Unio sinuatus* Lam., a shell found in the Rhine, Meuse, Seine, Rhone, Loire, Garonne, Charente, Adour, Dordogne, Tarn, etc., but of whose northern distribution there seems to be no record. In his Mollusques de France, p. 634, the Abbé Dupuy makes the following remarks on this species:

"Cette espèce si remarquable et dont les caractères sont si tranchés, a été confondue par presque tous les auteurs français, après Draparnaud, avec la *Margaritana margaritifera* Lam., qui en diffère essentiellement puisqu' elle n' a pas les lamelles postérieures qui en ont fait faire un genre particulier par plusieurs auteurs. L'erreur est venue, chez les auteurs français de ce qu'ils n'avient pas en connaissance d'échantillons authentiques d' *Unio margaritiferus* Retz. (*Mya margaritifera* Linn.). D'un autre côté, les étrangers ont donné le nom d' *U. sinuatus* à une grosse var. sinuée inférieurement du véritable *Unio margaritiferus* Retz., parce qu'ils ne connaissaient pas non le veritable *U. sinuatus* Lamk.

I wish to add, that having been favored with numerous specimens of both these species, from authentic localities, I can see how these shells may have easily seemed to collectors to be very similar. The fact that a species so closely allied to the *M. margaritifera*, and yet so evidently distinct from it, exists both in Europe and America, is one of considerable interest, and when taken in connection with other associated facts, becomes somewhat suggestive.

In this connection I wish to invite correspondence concerning the geographical distribution and variation of the Unionidæ, and the exchange of specimens.—*A. G. Wetherby.*

NOMENCLATURE OF EXTERNAL PARTS OF ARTHROPODA.—The following terms have been devised for convenience in anatomical and systematic work on the Arthropoda, and are submitted for the judgment of naturalists. We have adopted them in a forthcoming monograph of N. A. Phyllopoda now in the press.

The term *arthromere*, originally employed in the author's "Guide to the Study of Insects" in 1869, is now restricted to the body-segments of Arthropods, the term zonite or somite being used for the body-segments of worms, as well as Arthropods. The "head," "thorax," and "abdomen" are termed respectively *cephalosome*, *bænosome* (Gr. *baino*, to walk, locomotion), and *urosome*. The head-segments are termed *cephalomeres*, the thoracic segments *bænomeres*, and the abdominal *uromeres*. For the antennæ, the term *æsthopoda*, and for the mandibles and maxillæ the previously used term *gnathopoda* is adopted.

The thoracic legs are termed *bænopoda*, and for the abdominal legs, Westwood's term *uropoda*, applied by him to the terminal pairs of feet of the Tetradecapoda is extended to all the abdominal feet of Arthropods. The basal abdominal feet of male Decapoda modified as accessory reproductive organs, are termed, for convenience in descriptive carcinology, *gonopoda*, and the jointed anal cerci of certain insects and of Apus, are termed *cercopoda* (*kerkos*, cauda). For further explanations and other more special terms, the reader is referred to the memoir to appear in Hayden's Report, U. S. Geological Survey for 1879.—*A. S. Packard, Jr.*

ZOOLOGICAL NOTES.—A series of papers on the comparative morphology of the ear, by C. S. Minot, is appearing in the Journal of Otology. Thus far they relate to the auditory organs of the Medusæ, the Echinoderms, the Mollusca, worms and Crustacea. They will be found to be useful compilations, and are accompanied by cuts and full bibliographical lists.——The mites and other low Arachnids of the Malayan Archipelago are described and well-figured by Dr. Thorell in the annals of the Museo Civico di Storia Naturali di Genova.——Dr. H. C. Chapman describes a fœtal Kangaroo and its membranes in the Proceedings of the Academy of Natural Sciences of Philadelphia. The author closes his paper as follows: "On the supposition that the theory of evolution is true, one would naturally expect to find forms intermediate in their structure and development between the reptiles and birds on the one hand and the placental mammalia on the other. As is well known, in the structure of its skeleton and generative apparatus, the *Ornithorhyncus* resembles very closely the reptile and bird, while, as we have just seen, the fœtal membranes of the Kangaroo recall the corresponding parts in the reptilian-bird type and foreshadow those of the placental mammal. If the parts in question have been truthfully described and correctly interpreted as partly bridging over the gap between the non-placental and placental vertebrates, they supply exactly what the theory of evolution demands, and furnish, therefore, one more proof of the truth of that doctrine."——The vagus nerve of the domestic cat is described in detail, with wood cuts, by Dr. T. B. Stowell in the Proceedings of the American Philosophical Society. Having compared the vagus nerve in man, cat, dog, horse, ox, sheep, rabbit and frog, he is satisfied that the cat presents advantages over all others as a basis for comparative study. ——At a late meeting of the French Academy a paper was read by M. Koehlen on some attempts at hybridization between different species of Echinoids. These were successful in the case of a

Spatangus and a Psammechinus.——The Trichina when encysted in salt meat has been found, by M. Fourment, to possess vitality. In salt meat prepared fifteen months back were live Trichinæ, which were fully evolved in the alimentary canal of a new host, and caused death.——Professor Th. Eimer contributes to *Nature* a letter regarding the existence of a voice in lizards, which he has observed in the wall lizard of the rocks of Capri, a peculiarity generally ascribed among reptiles to geckoes and chamæleons alone. This lizard makes a peculiar soft piping sound on being captured, and "uttered repeatedly in quick succession, a series of very sharp tones, sounding like 'bschi,' and reminding me of the hoarse piping of a mouse or a young bird." Dugès also states that *Lacerta edwardsi*, a little lizard peculiar to the shores of the Mediterranean, is apt to utter a sound like the croaking of a Cerambyx, while *Lacerta ocellata*, when angry, will expel its breath so vehemently that a sort of noise is produced. According to Landois *Lacerta viridis* is able to utter a distinctly hissing or blowing sound. *Tapoya douglassii*, a kind of lizard living near the Oregon lake, when irritated, hisses very audibly, while the iguanas are reported to hiss and blow on being caught.——A pigmy pig (*Porculia salvania*), a very rare creature from the Doars of Bhotan, has recently been added to the Zoölogical Society's collection in London. These lively little pigs, says a correspondent of *Nature*, probably weigh hardly as much as a hare, but are most active and energetic, and are ordinary pigs in miniature.——Professor Marey has lately published an article on a "photographic gun," by which he has been enabled to take some most interesting instantaneous photographs of birds in flight.

ENTOMOLOGY.[1]

Change of Habit; two new enemies of the Egg-plant.—In our writings on the Colorado potato-beetle, we have repeatedly drawn attention to the fact that *Doryphora juncta*, although a native of the Atlantic States and living in the midst of our cultivated species of Solanum, has yet never shown any inclination to leave its natural food-plant, the wild horse-nettle (*Solanum carolinense*) for the cultivated species of the genus. We have now for the first time to record its appearance as an enemy to horticulture, Dr. A. Oemler, of Wilmington island, near Savannah, Ga., having found it—larvæ as well as beetles—feeding on his egg-plants in the earlier part of June. There can be no doubt about the correctness of Dr. Oemler's observations, as the specimens were sent to us for determination. This is another of those instances of remarkable and sudden change in the food-habit of a tolerably common and otherwise well-known species which led us to the remarks made on p. 152 of this volume anent "New Insects injurious to Agriculture." As in other cases of this sort the

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[1] This department is edited by Prof. C. V. Riley, Washington, D. C., to whom communications, books for notice, etc., should be sent.